

ALNUS INCANA/CORNUS SERICEA

COMMON NAME Mountain Alder/Red-osier Dogwood

PHYSIOGNOMIC TYPE Shrub thicket

SIMILAR COMMUNITIES Includes Crowe and Clausnitzer's (1997) *Alnus incana-Cornus sericea*/Mesic fob association.

RANGE Stands occur in Utah (Padgett *et al.* 1989), Nevada (Manning and Padgett 1995), Oregon (Crowe and Clausnitzer 1997), and Idaho (Jankovsky-Jones 1996; 1997a; 1997b; 1997c).

SOILS Soils form by fluvial deposition and scouring and generally have more than 35% coarse fragments at least in the subsurface horizons. Estimated available water-holding capacity ranged from low to moderate. Water tables are closely related to the height of the community above the water level of adjacent streams. Soils have been classified as Aquic Cryofluvents, Typic Udifluvents, Mollic Xerofluvents, and Typic and Aquic Cryoborolls (Padgett *et al.* 1989).

ENVIRONMENTAL DESCRIPTION This community type occurs immediately adjacent to streams that are subject to seasonal fluvial scouring and deposition. Surface topography is typically undulating and slopes are often 2% or less. Valley bottoms are narrow to moderately wide (Padgett *et al.* 1989). Elevations range from below 3,000 to nearly 8,000 feet.

MOST ABUNDANT SPECIES

| Strata | Species |
|-------------|---|
| Tall Shrub | <i>Alnus incana</i> , <i>Cornus sericea</i> , <i>Salix lasiolepis</i> |
| Short Shrub | <i>Rosa woodsii</i> |
| Herbaceous | <i>Equisetum hymenale</i> |

VEGETATION DESCRIPTION *Alnus incana* dominates the tall shrub overstory of this community. *Betula occidentalis* may occasionally be present as codominant. *Cornus sericea* forms a dense shrub layer with *Salix lutea*, *S. lasiolepis*, *Philadelphus lewisii*, *Crataegus douglasii*, and *Rosa woodsii*. The herbaceous layer is usually sparse, with no species occurring in high abundance (Padgett *et al.* 1989).

WILDLIFE VALUES The low tree/shrub layers provide structural diversity for birds and other animals, while providing shade to the adjacent streams (Padgett *et al.* 1989).

OTHER NOTEWORTHY SPECIES No information available.

ADJACENT COMMUNITIES Because of the wide elevational range of this type, adjacent upland communities range from sagebrush-steppe to coniferous woodland and forest types.

CONSERVATION RANK G4 S3

SUCCESSION AND MANAGEMENT This early seral type occurs adjacent to streams and is frequently subjected to seasonal flooding, scouring and deposition. It appears to be long-lived; succession to other types is probably slow. At lower elevations, this community type is replaced by the *Betula occidentalis*/*Cornus sericea* community type and in some areas these two communities grade into one another with both *Alnus incana* and *Betula occidentalis* present in the overstory. *Alnus incana*, *Cornus sericea*, and *Betula occidentalis* are well adapted to growing immediately adjacent to streams. They appear to withstand periodic flooding and seem to require the more aerated ground water that flows through the coarse-textured subsurface soils with which they are commonly associated (Padgett *et al.* 1989; Manning and Padgett 1995).

Because of their rooting structure, the dominant shrub species are capable of holding coarse textured streambank materials in place and can act as filters for upland water and soil movement into channel systems. Livestock grazing is limited because of dense undergrowth (Padgett *et al.* 1989).

CLASSIFICATION COMMENTS Classification is based on 5 plots from Utah (Padgett *et al.* 1989), 2 plots from Nevada (Manning and Padgett 1995), 17 plots in Oregon, and 2 plots from Idaho.

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EDITION AUTHOR B. Moseley

***ARTEMISIA TRIDENTATA* VAR. *TRIDENTATA*/ELYMUS CINEREUS**

COMMON NAME Basin Big Sagebrush/Basin Wildrye

PHYSIOGNOMIC TYPE Shrubland

SIMILAR COMMUNITIES The *Artemisia tridentata* var. *vaseyana*/*Elymus cinereus* (Hironaka *et al.* 1983) is a widespread type that is more often found in swales and other depressions in upland settings in the foothills and mountains. Occasionally it is found in drainage bottoms at the heads of mountain streams.

RANGE This type has been reported from Colorado, Wyoming, Nevada, Idaho, Oregon, and possibly Wyoming (Hironaka *et al.* 1983; Bourgeron and Engelking 1994; Weixelman *et al.* 1996).

SOILS The surface soil material is silty loam to sandy loam and can be very deep. Where coarse fragments occur in the soil profile, they are generally less than 60% by volume in any given horizon. In some stands surface soils are moist into late summer and depth to field capacity

moisture is within a meter of the surface in the summer. On deep alluvial terraces along larger rivers, this depth may be as deep as 3 m and the surface soils are dry by late summer. Soils at higher elevation sites in Nevada have been classified as Cryoborolls, while at lower elevations in Idaho they are Haploxerolls (Weixelman *et al.* 1996; Fisher 1997).

ENVIRONMENTAL DESCRIPTION This community is often in the transition zone between drier upland communities and the wetter riparian zone. *Artemisia tridentata* var. *tridentata* is an indicator of deep soil. It is most often found in areas of alluvial deposition, such as floodplains, drainageways, and stream terraces, but also has been observed on toeslopes. Occurrences are generally below 6,000 feet in the north (Idaho) and 8,000 feet in the south (Nevada).

MOST ABUNDANT SPECIES

| Strata | Species |
|------------|--|
| Tall Shrub | <i>Artemisia tridentata</i> var. <i>tridentata</i> |
| Herbaceous | <i>Elymus cinereus</i> , <i>Poa juncifolia</i> |

VEGETATION DESCRIPTION *Artemisia tridentata* var. *tridentata* dominates the shrub layer and a mixture of graminoids and forbs dominate the herbaceous layer in stands of high ecological condition, however, *Elymus cinereus* usually is the most abundant species. Basin big sagebrush generally has a canopy of 10-50%. It has a stout taproot which grows to a depth of 1 to 4 m and is able to tap moisture deep in the soil profile. Therefore, basin big sagebrush is considered to be a phreatophyte. Cover of *Chrysothamnus* spp. is low in high quality stands. Total graminoid cover can be as high as 70%, with *Elymus cinereus* comprising most of this. Total forb cover is generally between 5 and 20% (Weixelman *et al.* 1996).

WILDLIFE VALUES Information not available.

OTHER NOTEWORTHY SPECIES Information not available.

ADJACENT COMMUNITIES This community largely occurs in the sagebrush-steppe zone, with adjacent upland communities being dominated by various *Artemisia tridentata* varieties.

CONSERVATION RANK G2 S1

CONSERVATION RANK COMMENTS This plant association was formerly widespread in the western United States and is rare due to habitat loss and degradation of stands. The association is believed to be extirpated in Washington. In other western states high quality examples are of rare occurrence and most stands are small and fragmented. Livestock use has reduced the quality of stands and continues to threaten remaining occurrences. Agricultural conversion has also eliminated habitat previously occupied by the association. Exotic species,

including *Poa pratensis* or *Bromus tectorum*, may become locally dominant nearly replacing the diagnostic graminoid.

SUCCESSION AND MANAGEMENT Indicators of disturbance in this community, such as heavy livestock grazing or fire, include high coverage of species such as *Chrysothamnus* spp., *Iva axillaris*, *Iris missouriensis*, and *Bromus tectorum* (Weixelman *et al.* 1996).

Chrysothamnus spp. dominate occurrences in poor ecological condition. Soil infiltration rates are lower due to compaction or lack of graminoid root growth. Rooting depth is also significantly shallower (Weixelman *et al.* 1996).

CLASSIFICATION COMMENTS Classification is based on 22 plots in central Nevada (Weixelman *et al.* 1996), one plot in Idaho, and an unknown number of plots in Oregon (Hironaka *et al.* 19983) and Colorado (Bourgeron and Engelking 1994).

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EDITION AUTHOR B. Moseley

CORNUS SERICEA

COMMON NAME Red-osier Dogwood

PHYSIOGNOMIC TYPE Shrub thicket

SIMILAR COMMUNITIES *Cornus sericea* is a community dominant in several associations. This community, however, lacks the structural diversity of the other types, for example the *Alnus incana*/*Cornus sericea* and *Cornus sericea*-*Salix* sp. types from Nevada (Manning and Padgett 1995). The relationship of this community with the *Cornus sericea*/*Heracleum lanatum* and *C. sericea*/*Galium triflorum* types from Utah and eastern Idaho (Youngblood *et al.* 1985; Padgett *et al.* 1989) is unclear.

RANGE This is a widespread type known from Washington, Oregon, Idaho, Nevada, and Montana.

SOILS Soils of this community are classified as Inceptisols, Entisols, or Mollisols. Where sites are located outside of the active floodplain, a litter/duff layer 2 inches or more thick may accumulate. Surface horizons are comprised of a wide range of alluvial materials with textures ranging from silty clays to sandy loams. These layers may be relatively shallow or as deep as 5 feet. Underlying layers are typically coarse sands, gravels, and cobbles that facilitate the movement of aerated groundwater through the subsurface layers which may be important for the longevity of stands. Water availability ranges from high, where this type occupies floodplains

immediately adjacent to active channels, to low on upper, remote floodplain sites. Mottled and gleyed soils may occur (Manning and Padgett 1995; Hall and Hansen 1997; Crowe and Clausnitzer 1997).

ENVIRONMENTAL DESCRIPTION This type is typically adjacent to stream and river channels, but it can occupy a diversity of landforms. It may appear as dense linear bands on alluvial benches in narrow canyons or broad thickets on islands and floodplains of major streams and rivers. Most occurrences have evidence of annual or near-annual flooding (Manning and Padgett 1995; Hall and Hansen 1997).

MOST ABUNDANT SPECIES

| Strata | Species |
|------------|---|
| Tall Shrub | <i>Cornus stolonifera</i> , <i>Rosa woodsii</i> |
| Herbaceous | <i>Urtica dioica</i> |

VEGETATION DESCRIPTION *Cornus sericea* forms a dense, closed canopy, often excluding understory shrub and herbaceous species. *Cornus sericea* is usually the only species with high cover values. Associated species vary with geography and elevation, but constant shrubs include *Rosa woodsii*, *Ribes hudsonianum*, *Acer glabrum*, *Salix exigua*, *S. lutea*, and *Clematis ligusticifolia*. Because of its wide range, a great diversity of herbaceous species are associated with this community, usually in low cover (Manning and Padgett 1995; Hansen *et al.* 1995; Hall and Hansen 1997; Crowe and Clausnitzer 1997).

WILDLIFE VALUES Red-osier dogwood provides food and cover for mule deer, moose, elk, mountain goats, cottontail rabbits, snowshoe hares, and many birds. The fruits are an important back bear food and are also eaten by songbirds, grouse, quail, partridge, cutthroat trout, ducks, crows, mice, and other mammals. The young stems and bark are eaten by deer mice, meadow voles, and other small rodents. Red-osier dogwood often grows in dense thickets because of its layering ability. These thickets provide good mule-deer fawning and rearing areas and nesting habitat for many songbirds (Hansen *et al.* 1995; Crowe and Clausnitzer 1997).

OTHER NOTEWORTHY SPECIES Information not available.

ADJACENT COMMUNITIES Because of the wide geographic range for this type, communities of adjacent uplands can be coniferous forest, aspen, sagebrush-steppe, and pinyon-juniper types.

CONSERVATION RANK G4 S3

SUCCESSION AND MANAGEMENT This is considered an early seral community, typically colonizing sites adjacent to streams. The herbaceous cover is often sparse, probably due to the dense overstory canopy and regular flooding, scouring, and deposition. The latter factor is

probably responsible for maintaining this as a persistent community type on the landscape. The presence of tall shrubs or trees in some stands may represent succession toward *Alnus incana*, *Populus trichocarpa*, *P. tremuloides*, *P. angustifolia*, *Picea engelmannii*, *Pseudotsuga menziesii*, or other communities.

The herbaceous biomass varies widely and is largely dependent on the density of the dogwood canopy (Crowe and Clausnitzer 1997). Ratings for red-osier dogwood palatability for livestock range from low (Manning and Padgett 1995; Crowe and Clausnitzer 1997) to "ice cream" (Hansen *et al.* 1995; Hall and Hansen 1997), but the stands are often so dense that they limit grazing in many cases. This community functions in a variety of ways to promote stream health. Red-osier dogwood forms dense root networks that stabilize streambanks against lateral cutting and erosion, provides cover in the form of overhanging branches and banks, and shades channels, effectively moderating extreme summer temperature fluctuations (Hall and Hansen 1997). Dogwood sprouts vigorously after a fire and germination of its seed-bank is stimulated by fire (Crowe and Clausnitzer 1997).

CLASSIFICATION COMMENTS Stands of this community type have been sampled in Washington, Oregon, Idaho, Nevada, and Montana.

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EDITION AUTHOR B. Moseley

SARCOBATUS VERMICULATUS/DISTICHILIS STRICTA

COMMON NAME Greasewood/Saltgrass

PHYSIOGNOMIC TYPE Shrubland

SIMILAR COMMUNITIES This is a distinctive type in the *Sarcobatus vermiculatus* alliance.

RANGE This type occurs in Colorado, Idaho, Montana, Washington, and Oregon (Bourgeron and Engelking 1994), and possibly also Wyoming, Nevada, and Utah (Daubenmire 1970).

SOILS The type occurs on poorly-drained, fine-textured alluvium. Soils have a high pH. Daubenmire (1970) found that *Sarcobatus vermiculatus* raises the soil pH directly beneath the canopy.

ENVIRONMENTAL DESCRIPTION The *Sarcobatus vermiculatus/Distichilis stricta* community occurs in broad, level to gently sloping bottomlands, either along low-gradient creeks and rivers or as internally drained basins. These depositional areas generally have deep alluvial soils. The water table is generally within a few cm of the soil surface throughout the growing

season. Elevations are generally less than 5,000 and the climate is arid. Salts accumulate in the soils as inflowing surface waters evaporate.

MOST ABUNDANT SPECIES

| Strata | Species |
|-------------|---|
| Short Shrub | <i>Sarcobatus vermiculatus</i> |
| Herbaceous | <i>Distichilis stricta</i> , <i>Hordeum jubatum</i> |

VEGETATION DESCRIPTION This type is characterized by a sward of *Distichilis stricta* over which are scattered bushes of *Sarcobatus vermiculatus* growing 1-2 m tall. Species richness is very low.

WILDLIFE VALUES Information not available.

OTHER NOTEWORTHY SPECIES A vascular plant species rare in Idaho, *Teucrium canadense*, occurs in the ecotone between this community and the *Scirpus acutus* type at one site.

ADJACENT COMMUNITIES The low elevations occupied by this community limit adjacent upland vegetation to either salt-desert shrub (e.g., *A. confertifolia* and *Grayia spinosa*) or *Artemisia tridentata*-steppe vegetation.

CONSERVATION RANK G4 S1

SUCCESSION AND MANAGEMENT Fire kills *Sarcobatus vermiculatus* back only to the ground surface, and sprouts from the root crown appear promptly afterward (Daubenmire 1970). *Distichilis stricta* appears to recover to near pre-fire cover within five years. Heavy grazing leads to the dominance by annuals such as *Bromus tectorum*, *Lepidium perfoliatum*, and *Bassia hyssopifolia*, but the *Distichilis* itself is highly tolerant of grazing. Only severe use will bring about its displacement.

Ordinarily, *Sarcobatus vermiculatus* is little used by livestock, but under heavy grazing pressure the shrubs become smaller and develop a compact canopy of foliage, with *Bromus tectorum* replacing the *Distichilis*. It has been shown that in a *Sarcobatus* stand where *Distichilis* had been replaced by *Bromus tectorum* because of past heavy grazing, winter rains moistened the soil profile no deeper than 6 dm. However, the negligible transpiration of the leafless shrub in winter allowed so much water to be stored in the soil that the following spring *Bromus* was distinctly more productive here than in a nearby area where the only shrub was the evergreen, *Artemisia tridentata* (Daubenmire 1970).

CLASSIFICATION COMMENTS Stands of this community have been sampled in Washington (7), Idaho (2), and possibly elsewhere.

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EDITION AUTHOR B. Moseley

CAREX UTRICULATA

COMMON NAME Bladder Sedge

PHYSIOGNOMIC TYPE Herbaceous

SIMILAR COMMUNITIES The sedge species that dominates this community was previously thought to be *Carex rostrata*, which was included in many community type names throughout the west. We now know this species to be *C. utriculata* and not *C. rostrata*, which has a northern, largely boreal distribution.

RANGE This community occurs in the following states: Washington, Oregon, Nevada, Idaho, Montana, Wyoming, Utah, New Mexico, and Colorado.

SOILS Soils are classified as Histisols, Mollisols, and Inceptisols, and Entisols. Mineral soils are generally very organic-matter rich and often have an incipient histic epipedon forming at the surface. These soils may eventually become Histisols. Most of the mineral soils are fine-textured and have high water holding capacity. The soils are saturated to the surface well into the summer and the water table is usually within 2 feet of the surface late into the growing season (Crowe and Clausnitzer 1997; and others).

ENVIRONMENTAL DESCRIPTION This community is widespread at moderate to high elevations in the mountains, rarely the low-elevation valleys or on volcanic plains. It occurs in a wide variety of landscape settings, such as in narrow to broad valley bottoms on meadows, seeps, stream terraces and is commonly associated with ponds and sloughs that have silted in. It can occur in standing water or on sites that become relatively dry during the latter part of the growing season. Valley bottom gradients are low (Padgett *et al.* 1989; Hall and Hansen 1997).

VEGETATION DESCRIPTION *Carex utriculata* typically exhibits monospecific dominance in this community, with dense cover. *Carex nebraskensis*, *C. simulata*, *C. aquatilis*, and/or *Juncus balticus* may be abundant in this species-poor community. Litter often accumulates and few species can establish on these organic, permanently saturated or inundated soils. This is why willows are rarely present in this community (Hansen *et al.* 1995; Manning and Padgett 1995; Crowe and Clausnitzer 1997).

WILDLIFE VALUES This community performs a vital role in maintaining water quality and aquatic health in headwater streams. Past beaver activity is often evident in this community type, and *Carex utriculata* is one of the species likely to pioneer newly-flooded beaver ponds. Palatability appears to be lower than for other sedges such as *Carex nebraskensis* or *C. aquatilis*.